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10/022,092	12/17/2001	Manuel Burger	BURGER-2	2901

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EXAMINER

EDWARDS, LAURA ESTELLE

ART UNIT PAPER NUMBER

1734

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,092

Applicant(s)

BURGER, MANUEL

Examiner

Laura E. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 25-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 121701.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Election/Restrictions

Applicant's election of Group I, claims 1-24 in the response dated 3/19/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

The disclosure is objected to because of the following informalities: on page 4, line 6, the degree symbol is incorrect. It is suggested that the term --degree-- be used. Also, on page 6, line 11, the equal sign needs to be removed. On page 11, line 14, "if" should be changed to --of--.

Appropriate correction is required.

Claim Objections

Claim 9 is objected to because of the following informality: on line 3, a typographical error exists with respect to the symbol for "degrees". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

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in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed does not teach or suggest a specific temperature range or "thermoplastic range" as recited in claim 14. One of ordinary skill in the art would not know what desired temperature range is applicable to heat the pipes as intended by Applicant.

Claims 2-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 5-6, it is unclear what is meant by "applying at least one additional bending unit to the pipe corresponding to a number of further bending operations planned". First a single pipe is referred to in which previously plural pipes have been set forth. Also, the language at the end of the claim with respect to further bending operations planned is awkward.

In claim 3, lines 1-2, "said outer bending units" lack antecedent basis.

In claim 3, lines 2-3, "said inner bending units" lack antecedent basis.

In claim 4, line 4, Applicant refers to "a piece of material" and it is unclear whether Applicant is referring to a single pipe. Clarification is necessary.

In claim 8, line 5, "said gripping pliers" lack antecedent basis.

In claim 10, line 2, "said material" lacks antecedent basis.

In claim 14, line 2, it is unclear what is meant by a thermoplastic range.

In claim 18, line 2, "the plastic pipe section" lacks antecedent basis.

In claims 23 and 24, line 2, "the pipe section" lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Potter (US 5,984,659).

Potter teaches a process for shaping and processing pipes with a plurality of adjustable bending units comprising the steps of providing an apparatus for bending a plurality of pipes, the apparatus including bending units (44), moving the bending units including profiling rollers (47-53) freely along the pipes; and performing a plurality of bending operations on pipes provided on a mandrel holder (36) using the adjustable bending units, the bending of the pipes being completed at the same time.

With respect to claims 6 and 7, see grippers (34) in Fig. 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 10-14 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter (US 5,984,659) in view of Parmann (US 3,965,715).

Potter teaches a process of bending a plurality of pipes as mentioned above but Potter does not teach or suggest heating the pipes to facilitate bending of the pipes. However, it was known in the art at the time the invention was made, to utilize heat application to pipes internally and/or externally during processing so as to facilitate bending of the pipes without damage thereto as evidenced by Parmann (see col. 1, lines 12-24; col. 2, lines 14-21; and col. 5, lines 23-37). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate heat processing as taught by Parmann in the Potter bending process to facilitate the bending and/or shaping of the pipes without damage thereto.

With respect to claims 18-20, see Parmann, col. 6, lines 33-38.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter (US 5,984,659) and Parmann (US 3,965,715) as applied to claims 10-14 and 17-21 above, and further in view of Kodama et al (US 5,422,048).

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The teachings of Potter and Parmann have been mentioned above but neither teach or suggest heating with a radiation heater (i.e., IR). However, it was known in the art at the time the invention was made, to utilize a radiation heat source to rapidly and cheaply heat pipes during bending processing as evidenced by Kodama et al (see col. 3, lines 1-24). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate radiation heat processing as taught by Kodama et al in the bending process defined by the combination above in order to reduce bending processing time and costs.

Claims 1-3, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crupi (US 4,747,768) in view of Schwarze (US 4,137,743).

Crupi teaches a process for shaping and processing at least one pipe with a plurality of adjustable bending units comprising the steps of providing an apparatus for bending the pipe, the apparatus including bending units (14, 15), the bending units moving along the pipe; and performing a plurality of simultaneous bending operations on the pipe. Crupi does not teach bending plural pipes at the same time. However, it was known in the art at the time the invention was made to provide simultaneous bending of plural pipes, one within the other, as evidenced by Schwarze (see col. 1, lines 1-11). In view of the teachings of Schwarze, it would have been obvious to one of ordinary skill in the art, to place one pipe within the other in the Crupi process in order to bend plural pipes at one time and thereby minimize processing time and lower manufacturing costs.

With respect to claim 2, the combination as taught by Crupi and Schwarze provides a process wherein two pipe end sections would be engaged by at least one bending unit.

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Furthermore, as for the use of additional bending units, Crupi suggests that the number of units may increase (see col. 7, lines 15-18) in accordance with the article being formed.

With respect to claim 3, the bending units, as taught by Crupi, extend laterally with respect to the pipe being bent.

With respect to claim 23, see Crupi, col. 6, lines 63-67.

With respect to claim 24, Crupi is silent concerning the use of a flexible core member in the pipe, however, it was known in the art, at the time the invention was made, to provide a flexible core member or mandrel within pipes in order to prevent collapse of the pipes while bending as evidenced by Schwarze (see col. 6, lines 10-50). It would have been obvious to one of ordinary skill in the art to further provide flexible mandrels as taught by Schwarze in the bending process defined by the combination above in order to prevent collapse or damage to the pipes during bending.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crupi (US 4,747,768) and Schwarze (US 4,137,743) as applied to claims 1-3, 23, and 24 above and further in view of Maier (US 4,009,982).

The teachings of Crupi and Schwarze have been mentioned above but neither teach or suggest the use of sealing nipples at the end sections of the pipes. However, it was known in the art, at the time the invention was made, to provide sealing nipples at end sections of a pipe in order to form flanges for pipe coupling as evidenced by Maier (see col. 2, lines 19-23, lines 56-66; col. 4, lines 34-39). It would have been obvious to one of ordinary skill in the art to provide

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sealing nipples are taught by Maier in the bending process defined by the combination above in order to manufacture end sections for pipe coupling.

Claims 10-14 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crupi (US 4,747,768) and Schwarze (US 4,137,743) as applied to claims 1-3, 23, and 24 above, and further in view of Parmann (US 3,965,715).

The teachings of Crupi and Schwarze have been mentioned above but neither teach or suggest heating the pipes to facilitate bending of the pipes. However, it was known in the art at the time the invention was made, to utilize heat application to pipes internally and/or externally during processing so as to facilitate bending of the pipes without damage thereto as evidenced by Parmann (see col. 1, lines 12-24; col. 2, lines 14-21; and col. 5, lines 23-37). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate heat processing as taught by Parmann in the bending process defined by the combination above in order to facilitate the bending and/or shaping of the pipes without damage thereto.

With respect to claims 18-20, see Parmann, col. 6, lines 33-38.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crupi (US 4,747,768), Schwarze (US 4,137,743), and Parmann (US 3,965,715) as applied to claims 10-14 and 17-21 above and further in view of Kodama et al (US 5,422,048).

The teachings of Crupi, Schwarze, and Parmann have been mentioned above but none teach the use of a radiation heater (i.e., IR). However, it was known in the art at the time the invention was made, to utilize a radiation heat source to rapidly and cheaply heat pipes during

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bending processing as evidenced by Kodama et al (see col. 3, lines 1-24). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate radiation heat processing as taught by Kodama et al in the bending process defined by the combination above in order to reduce bending processing time and costs.

Claims 1-3 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al (US 4,351,178) in view of Schwarze (US 4,137,743).

Uehara et al teach a process for shaping and processing at least one pipe with a plurality of adjustable bending units comprising the steps of providing an apparatus for bending pipe (14), the apparatus including bending units (6), the bending units moving along the pipe; and performing a plurality of simultaneous bending operations on the pipe (see col. 3, lines 40-44). Uehara et al do not teach bending plural pipes at the same time. However, it was known in the art at the time the invention was made to provide simultaneous bending of plural pipes, one within the other, as evidenced by Schwarze (see col. 1, lines 1-11). In view of the teachings of Schwarze, it would have been obvious to one of ordinary skill in the art, to place one pipe within the other in the Uehara et al process in order to bend plural pipes at one time and thereby minimize processing time and lower manufacturing costs.

With respect to claim 2, the combination as taught by Uehara et al and Schwarze provides a process wherein two pipe end sections would be engaged by at least one bending unit. Furthermore, as for the use of additional bending units, Uehara et al show at least three bending units in Fig. 5.

With respect to claim 3, the bending units, as taught by Uehara et al, are capable of moving laterally and longitudinally with respect to the pipe being bent as evidenced by claim 1.

With respect to claim 24, Uehara et al are silent concerning the use of a flexible core member in a pipe section, however, it was known in the art, at the time the invention was made, to provide a flexible core member or mandrel within pipes in order to prevent collapse of the pipes while bending as evidenced by Schwarze (see col. 6, lines 10-50). It would have been obvious to one of ordinary skill in the art to further provide flexible mandrels as taught by Schwarze in the bending process defined by the combination above in order to prevent collapse or damage to the pipes during bending.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al (US 4,351,178) and Schwarze (US 4,137,743) as applied to claims 1-3 and 24 above and further in view of Maier (US 4,009,982).

The teachings of Uehara et al and Schwarze have been mentioned above but neither teach or suggest the use of sealing nipples at the end sections of the pipes. However, it was known in the art, at the time the invention was made, to provide sealing nipples at end sections of a pipe in order to form flanges for pipe coupling as evidenced by Maier (see col. 2, lines 19-23, lines 56-66; col. 4, lines 34-39). It would have been obvious to one of ordinary skill in the art to provide sealing nipples are taught by Maier in the bending process defined by the combination above in order to manufacture end sections for pipe coupling.

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Claims 10-14, 17-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al (US 4,351,178) and Schwarze (US 4,137,743) as applied to claims 1-3 and 24 above, and further in view of Parmann (US 3,965,715).

The teachings of Uehara et al and Schwarze have been mentioned above but neither teach or suggest heating the pipes to facilitate bending of the pipes. However, it was known in the art at the time the invention was made, to utilize heat application to pipes internally and/or externally during processing so as to facilitate bending of the pipes without damage thereto as evidenced by Parmann (see col. 1, lines 12-24; col. 2, lines 14-21; and col. 5, lines 23-37). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate heat processing as taught by Parmann in the bending process defined by the combination above in order to facilitate the bending and/or shaping of the pipes without damage thereto.

With respect to claims 18-20, see Parmann, col. 6, lines 33-38.

With respect to claim 23, the combination taught by Uehara et al, Schwarze, and Parmann provides for internal pressurized heating of pipes as Parmann recognizes hot compressed air being supplied to the interior of a pipe section in col. 6, lines 34-42.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al (US 4,351,178), Schwarze (US 4,137,743), and Parmann (US 3,965,715) as applied to claims 10-14, 17-21, and 23 above and further in view of Kodama et al (US 5,422,048).

The teachings of Uehara et al, Schwarze, and Parmann have been mentioned above but none teach the use of a radiation heater (i.e., IR). However, it was known in the art at the time the invention was made, to utilize a radiation heat source to rapidly and cheaply heat pipes

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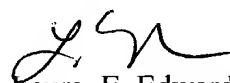
during bending processing as evidenced by Kodama et al (see col. 3, lines 1-24). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate radiation heat processing as taught by Kodama et al in the bending process defined by the combination above in order to reduce bending processing time and costs.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Laura E. Edwards
Primary Examiner
Art Unit 1734

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May 10, 2004